SAC Statistical Analysis Center

1996 MISSOURI EMERGENCY SERVICE VEHICLE CRASHES

Missouri State Highway Patrol

A division of the

Department of Public Safety

1996

MISSOURI

EMERGENCY SERVICE VEHICLE

CRASHES

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FOREWORD

This publication was produced by the Missouri State Highway Patrol at the request of the Missouri Division of Highway Safety.

It is the vision of the Missouri Division of Highway Safety to reduce the number and severity of traffic crashes occurring in Missouri by implementing the Governor's Highway Safety Program (according to the Federal Highway Safety Act of 1966). To provide the highest quality of service to our customers through fairness, responsiveness, and dedication.

Traffic safety officials and managers of emergency vehicles should carefully review this document and analyze their own operation and accident experience to insure that proper precautions and training measures have been implemented at their level.

If you require more information on traffic safety programs or need additional statistical information services, please forward your requests to my office.

Sincerely,

Joyce F. Marshall
Director

ACKNOWLEDGEMENTS

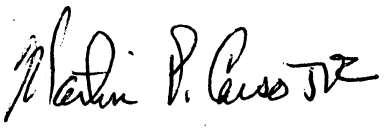
The Missouri Division of Highway Safety requested publication of this report to determine the magnitude, severity, and characteristics of traffic crashes involving emergency service vehicles in the State.

The primary source of information in this report was traffic crash data obtained from the Statewide Traffic Accident Records System (STARS). The Missouri State Highway Patrol, Traffic Division, is responsible for coordinating the STARS program as well as encoding all traffic crash data being reported.

Special recognition is given to all Missouri law enforcement agencies and officers who provide traffic crash investigation services on Missouri roadways and report their findings to STARS. Because of their efforts, traffic safety authorities have the capability of conducting analysis on Missouri's emergency service vehicle traffic crash problems.

Over the past few years, the ability to analyze Missouri's traffic safety problems using STARS data has been greatly enhanced, in large part, due to the Missouri Traffic Records Committee. This Committee was developed to act as an advisory body to the Missouri State Highway Patrol for upgrading and maintaining STARS. As a result of the Committee's work efforts, the STARS system and its field reporting form were upgraded as of January 1, 1996. The results of this upgrade are reflected in the 1996 statistics presented in this publication.

Finally, the U.S. Department of Transportation, National Highway Traffic Safety Administration, has supported the Statistical Analysis Center's efforts to provide meaningful research services and publications to Missouri traffic safety authorities. Their financial support and technical assistance is appreciated.



Martin P. Carso, Jr., Director
Statistical Analysis Center
Missouri State Highway Patrol

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AMBULANCE INVOLVEMENT

EXECUTIVE SUMMARY

The purpose of this report is to provide the Missouri State Highway Patrol, the Missouri Division of Highway Safety, and other State and local authorities with information on the problem of emergency service vehicle traffic crashes in the State of Missouri. In 1996, Missouri experienced 1,988 emergency service vehicle traffic crashes. Crashes of this nature are of special concern to traffic safety authorities because emergency service vehicles and, more importantly, their staff are critical public safety resources whose loss due to traffic crashes adversely affects the public welfare.

The primary source of data used in this study was the Missouri Statewide Traffic Accident Records System (STARS).

In 1996, there were 1,988 Missouri traffic crashes involving 2,034 emergency service vehicles. Nine persons were killed and 773 persons were injured in these traffic crashes. Of the 2;034 emergency service vehicles involved, 424 (20.8%) were on an emergency run at the time of the crash. The seriousness of these traffic crashes is compounded by the fact that the incident no doubt delayed or prevented the unit from responding to the original emergency situation.

Police vehicles account for the majority of emergency service vehicles involved in Missouri traffic crashes. Of the 2,034 emergency vehicles involved in 1996 traffic crashes, 1,602 (78.8%) were law enforcement vehicles. This finding is not surprising since there are a significantly greater number of police vehicles in operation compared to ambulances and fire vehicles. In addition, many law enforcement units patrol Missouri roadways throughout their shift, while ambulances and fire vehicles are normally stationed at fixed locations until called to respond to a situation.

Of the 2,034 emergency vehicles involved in 1996 Missouri traffic crashes, 216 (10.6%) were fire vehicles. Although no accurate count is available, the number of fire vehicles in the State is estimated to be larger than the ambulance vehicle population but much less than the police vehicle population. As with ambulances, fire vehicles made up a higher proportion of those vehicles involved in traffic crashes while on emergency runs. Of the 424 vehicles making an emergency run when involved in a traffic crash in 1996, 77 (18.2%) were vehicles of this type.

Of the 2,034 emergency service vehicles involved in 1996 Missouri traffic crashes, 197 (9.7%) were ambulances. However, ambulances do not make up a large proportion of the State's emergency service vehicle population. According to the Missouri Department of Health, Emergency Services Bureau, there were only 846 licensed ambulances in the State as of July 30, 1996. Ambulances also made up a higher proportion of emergency service vehicles involved in traffic crashes while making emergency runs. Of the 424 emergency service vehicles involved in 1996 Missouri traffic crashes while on emergency runs, 66 (15.6%) were ambulances.

INTRODUCTION

This report is one in a series which identifies the magnitude, severity, and characteristics of emergency service vehicles involved in traffic crashes occurring in the State of Missouri. It describes Missouri's emergency service vehicle traffic crash experience in 1995 and 1996 with emphasis on the most recent year (1996).

Missouri traffic safety authorities have expressed an interest in studying these types of incidents for a number of reasons. First, in a sizable portion of these incidents, the emergency service vehicles are responding to other emergency situations. In most instances, their involvement in traffic crashes either delays or totally prevents them from providing the emergency care services being requested. The timeliness of providing their services can be a critical factor in preventing further death, serious injury, and/or property damage in emergency situations.

Second, emergency service vehicles and, more importantly, the staff who operate them are critical public safety resources which the community can ill afford to lose as a result of their involvement in traffic crashes. Costs associated with vehicle replacement or repair are high because these types of vehicles are configured for emergency response (i.e., heavy suspension systems, larger engines, improved braking systems, emergency lights, siren, etc.). Even more significant are losses resulting from qualified emergency service staff being killed or injured in these traffic crashes. The loss of technically trained emergency service manpower reduces the community's capabilities to adequately respond to future emergency situations.

Finally, emergency vehicles involved in traffic crashes can result in death and injury to not only emergency vehicle staff but to other parties involved in the traffic crash.

Data used in this study were obtained from the Missouri Statewide Traffic Accident Records System (STARS). This system is maintained by the Missouri State Highway Patrol (MSHP). In accordance with State statute, law enforcement agencies are required to investigate traffic crashes occurring on public roadways if they involve a death or personal injury or property damage over $500.00. They submit their findings on a standard traffic accident report form to the STARS system. This standard traffic accident report form contains two fields designed to identify whether the vehicles involved were emergency service vehicles, the type of emergency service vehicle (police, fire, ambulance, or other), and whether or not it was on an emergency run.

Data from the traffic accident report forms are encoded by MSHP staff in computerized files. These files were made available to the MSHP Statistical Analysis Center (SAC) staff who conducted the analysis.

It should be noted that not all motor vehicle incidents involving damage to emergency service vehicles or injury to its staff were analyzed in this study due to data non-availability. Data on traffic crashes occurring on private property, such as a private driveway, were not attainable for this analysis. In addition, certain incidents are not classified as traffic crashes. For instance, cases where police establish a roadblock and a pursued person uses their vehicle to intentionally ram the blocking police vehicle are not classified as traffic crashes and are not included in this analysis.

The findings from this study are described in the following four sections. The first section provides an overview of Missouri's emergency services traffic crash problem. The second section describes the findings from an analysis which focuses on police vehicle involvement. The third section describes fire vehicle involvement and the last section covers ambulance involvement.

1.0 EMERGENCY SERVICE VEHICLE INVOLVEMENT OVERVIEW

This section presents a series of data displays which describe Missouri's emergency service vehicle traffic crash activity. Traffic crashes involving emergency service vehicles are defined as any crash in which one or more emergency service vehicles were directly involved in the incident. Emergency service vehicles include those assigned to law enforcement agencies, fire departments, and ambulance service agencies. In addition, vehicles operated by other agencies, such as public utilities and public service corporations, are considered emergency vehicles but only when they are actually performing emergency services.

SUMMARY OF ANALYSIS

- In 1996 there were 1,988 traffic crashes involving 2,034 emergency service vehicles in the State of Missouri. Nine persons were killed and 773 persons were injured in these traffic crashes. One person was killed or injured every 11.2 hours in these types of crashes in 1996.

- Police vehicles comprise the largest number of emergency service vehicles involved in Missouri's traffic crashes. Of the 2,034 emergency service vehicles involved, 1,602 (78.8%) were police vehicles. They were involved in a total of 1,576 traffic crashes. A total of 424 emergency service vehicles were on emergency runs when the traffic crash occurred. Of these, 262 (61.8%) were police vehicles. Law enforcement officers on-duty annual miles of travel are, no doubt, much greater than other types of emergency service providers. A large proportion of law enforcement officers are assigned to patrol Missouri's roadways throughout their normal shift of operations for crime prevention purposes as well as to provide quick response to calls for services. Normally, fire and ambulance service personnel are stationed at fixed locations from which they respond to emergency situations. In addition, there are larger numbers of police vehicles working Missouri's roadways than either ambulances or fire vehicles. The fact that law enforcement officers' on-duty miles of travel are substantially greater increases their risk of being involved in traffic crashes.

- Fire vehicles were the second most common type of emergency vehicle involved in Missouri's traffic crashes in 1996. Of the 2,034 emergency vehicles involved in 1996 Missouri traffic crashes, 216 (10.6%) were fire vehicles. They were involved in a total of 213 traffic crashes. Of the 424 emergency vehicles on emergency run at the time of the traffic crash, 77 (18.2%) were fire vehicles.

- Ambulances were the third most frequent emergency vehicle type involved in Missouri's 1996 traffic crashes. Of the 2,034 emergency vehicles involved, 197 (9.7%) were ambulances. They were involved in a total of 196 traffic crashes. Like fire vehicles, ambulances were more likely to be involved in a traffic crash when on an emergency run. Of the 424 emergency vehicles on emergency run when the traffic crash occurred, 15.6% were ambulances.

- Emergency vehicles classified as 'Other' made up a small proportion of those involved in Missouri's 1996 traffic crashes. Of the 2,034 emergency vehicles involved, only 19 (0.9%) were emergency vehicles classified as 'Other'.

1996 MISSOURI TRAFFIC CRASHES

EMERGENCY SERVICE (ES) VEHICLE INVOLVEMENT

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ES VEHICLE INVOLVED	9	0.9	468	0.9	1,511	1.1	1,988	1.0
NO ES VEHICLE INVOLVED	997	99.1	52,263	99.1	135,916	98.9	189,176	99.0
TOTAL	1,006	100.0	52,731	100.0	137,427	100.0	191,164	100.0

TABLE 1.0.1

MISSOURI EMERGENCY SERVICE VEHICLE INVOLVED CRASHES

1995 - 1996

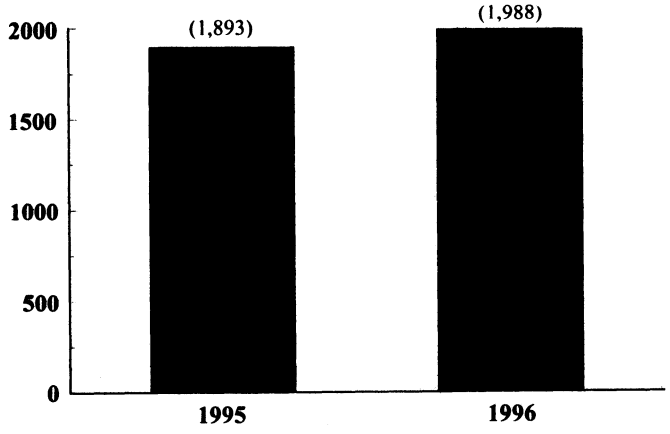


FIGURE 1.0.1

MISSOURI EMERGENCY SERVICE VEHICLE PERSONAL INJURY PROBLEM ANALYSIS CLOCK

1996

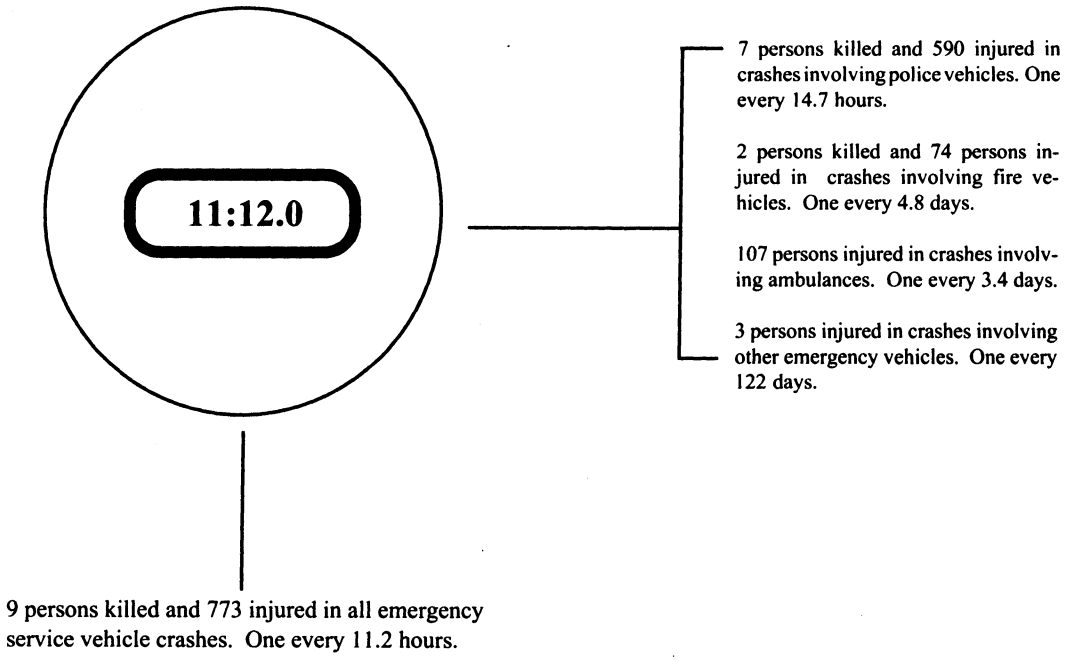


FIGURE 1.0.2

1996 MISSOURI EMERGENCY SERVICE (ES) VEHICLE CRASHES

TYPE OF EMERGENCY SERVICE VEHICLE INVOLVED

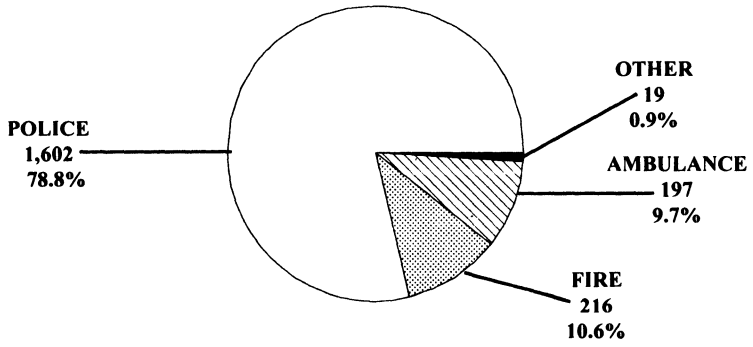
	FATAL	PERSONAL INJURY	PROPERTY DAMAGE	TOTAL	NUMBER OF ES VEHICLES INVOLVED[1]
TOTAL NUMBER OF ES VEHICLE CRASHES	**9**	**468**	**1,511**	**1,988**	**2,034**
INVOLVING					
POLICE VEHICLE	7	370	1,199	1,576	1,602
FIRE VEHICLE	2	40	171	213	216
AMBULANCE	0	56	140	196	197
OTHER ES VEHICLE	0	3	14	17	19

[1]The number of emergency service vehicles involved does not equal the number of emergency service traffic crashes since there are cases where more than one emergency service vehicle was involved in the same traffic crash. There were 1,988 traffic crashes involving 2,034 emergency service vehicles

TABLE 1.0.2

TYPE OF EMERGENCY SERVICE VEHICLES INVOLVED IN

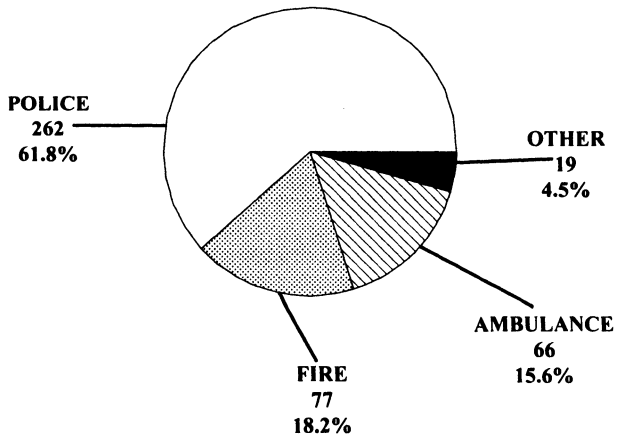
1996 MISSOURI TRAFFIC CRASHES



TOTAL = 2,034

FIGURE 1.0.3

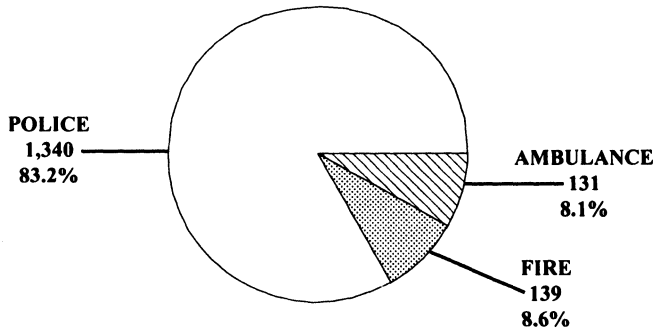
TYPE OF EMERGENCY SERVICE VEHICLES INVOLVED IN 1996 MISSOURI TRAFFIC CRASHES WHILE ON EMERGENCY RUN



TOTAL = 424

FIGURE 1.0.4

TYPE OF EMERGENCY SERVICE VEHICLES INVOLVED IN 1996 MISSOURI TRAFFIC CRASHES NOT ON EMERGENCY RUN



TOTAL = 1,610

FIGURE 1.0.5

2.0 POLICE VEHICLE INVOLVEMENT

This section presents a series of data displays which identify police vehicle involvement in Missouri's traffic crash activity. Police vehicle traffic crashes are defined as any crash in which one or more police vehicles were directly involved in the incident. Data displays also are provided which describe characteristics of the police vehicle drivers involved in these traffic crashes.

1996 SUMMARY ANALYSIS

- In 1996, there were 1,576 traffic crashes involving one or more police vehicles in the State of Missouri. Seven persons were killed and 590 were injured in these crashes.
- In 16.3% of the traffic crashes involving police vehicles, the police vehicle was on an emergency run at the time of the incident.
- In 1996, one person was killed or injured in a police vehicle related crash every 14.7 hours in the State of Missouri.
- Of all 1996 crashes involving police vehicles, the first harmful event in 56.3% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 17.9% of the cases, it involved a motor vehicle striking a fixed object. In 13.6% of the cases, the vehicle struck a parked vehicle.
- Of all 1996 crashes involving police vehicles, 65.4% occurred in an urban area of the State and 34.6% occurred in a rural area.
- Of all police vehicle drivers involved in 1996 traffic crashes, 92.0% were male and 8.0% were female. The average age of the police vehicle driver was 34.1 years.
- There were 1,602 police vehicles involved in the 1,576 traffic crashes in the State. Of these, 1,474 or 92.4% were automobiles.

1996 POLICE VEHICLE INVOLVED CRASHES

EMERGENCY RUN STATUS

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	TOTAL NUMBER[1] KILLED	TOTAL NUMBER[1] INJURED	POLICE VEHICLE DRIVERS/PASSENGERS[2] KILLED	POLICE VEHICLE DRIVERS/PASSENGERS[2] INJURED
POLICE VEHICLE ON RUN	2	28.6	82	22.2	173	14.4	257	16.3	2	132	1	78
POLICE VEHICLE NOT ON RUN	5	71.4	288	77.8	1,026	85.6	1,319	83.7	5	458	0	245
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0	7	590	1	323

[1]This statistic indicates the total number of persons killed and injured in a crash where one or more police vehicles were involved.

[2]This statistic indicates the number of police vehicle drivers and passengers killed and injured.

TABLE 2.0.1

1995 and 1996 POLICE VEHICLE INVOLVED CRASH ANALYSIS

	1995	1996	RATE OF CHANGE
FATAL	4	7	+ 75.0
PERSONAL INJURY	380	370	- 2.6
PROPERTY DAMAGE	1,168	1,199	+ 2.7
TOTAL	1,552	1,576	+ 1.5

TABLE 2.0.2

1996 POLICE VEHICLE INVOLVED CRASHES

CRASH TYPE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ANIMAL	0	0.0	6	1.6	106	8.8	112	7.1
BICYCLIST	0	0.0	4	1.1	5	0.4	9	0.6
FIXED OBJECT	1	14.3	47	12.7	234	19.5	282	17.9
OTHER OBJECT	0	0.0	1	0.3	36	3.0	37	2.4
PEDESTRIAN	0	0.0	6	1.6	1	0.1	7	0.4
TRAIN	0	0.0	0	0.0	0	0.0	0	0.0
VEHICLE IN TRANSPORT	5	71.4	273	73.8	609	50.8	887	56.3
VEHICLE ON OTHER ROADWAY	1	14.3	2	0.5	0	0.0	3	0.2
PARKED VEHICLE	0	0.0	23	6.2	191	15.9	214	13.6
NON-COLLISION OVERTURN	0	0.0	2	0.5	1	0.1	3	0.2
NON-COLLISION OTHER	0	0.0	6	1.6	16	1.3	22	1.4
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0

TABLE 2.0.3

1996 POLICE VEHICLE INVOLVED CRASHES

AREA CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
URBAN	3	42.9	274	74.1	753	62.8	1,030	65.4
RURAL	4	57.1	96	25.9	446	37.2	546	34.6
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0

TABLE 2.0.4

1996 POLICE VEHICLE INVOLVED CRASHES

ROAD CURVATURE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
STRAIGHT	6	85.7	322	87.7	1,035	87.5	1,363	87.5
CURVE	1	14.3	45	12.3	148	12.5	194	12.5
UNKNOWN	0	-	3	-	16	-	19	-
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0

TABLE 2.0.5

1996 POLICE VEHICLE INVOLVED CRASHES

ROAD INCLINE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
LEVEL	4	57.1	259	70.8	790	67.1	1,053	67.9
HILL	1	14.3	103	28.1	366	31.1	470	30.3
CREST	2	28.6	4	1.1	22	1.8	28	1.8
UNKNOWN	0	-	4	-	21	-	25	-
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0

TABLE 2.0.6

1996 POLICE VEHICLE INVOLVED CRASHES

ROAD CONDITIONS BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRY	7	100.0	277	75.1	909	76.5	1,193	76.3
WET	0	0.0	76	20.6	194	16.3	270	17.3
SNOW	0	0.0	6	1.6	28	2.4	34	2.2
ICE	0	0.0	10	2.7	53	4.5	63	4.0
MUD	0	0.0	0	0.0	4	0.3	4	0.3
UNKNOWN	0	-	1	-	11	-	12	-
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0

TABLE 2.0.7

1996 POLICE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	33	8.9	120	10.0	153	9.7
U.S. HIGHWAY	3	42.9	33	8.9	105	8.8	141	9.0
STATE NUMBERED	2	28.6	48	13.0	160	13.3	210	13.3
SINGLE STATE LETTERED	1	14.3	14	3.8	62	5.2	77	4.9
DOUBLE STATE LETTERED	0	0.0	5	1.4	18	1.5	23	1.5
OUTER ROAD	0	0.0	2	0.5	14	1.2	16	1.0
COUNTY ROAD	0	0.0	22	6.0	118	9.8	140	8.9
CITY STREET	1	14.3	200	54.1	543	45.3	744	47.2
INTERSTATE LOOP	0	0.0	6	1.6	1	0.1	7	0.4
OTHER[1]	0	0.0	7	1.9	58	4.8	65	4.1
TOTAL	7	100.0	370	100.0	1,199	100.0	1,576	100.0

[1] "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 2.0.8

1996 POLICE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

	URBAN								RURAL							
	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	21	7.7	64	8.5	85	8.3	0	0.0	12	12.5	56	12.6	68	12.5
U.S. HIGHWAY	2	66.7	17	6.2	43	5.7	62	6.0	1	25.0	16	16.7	62	13.9	79	14.5
STATE NUMBERED	0	0.0	21	7.7	64	8.5	85	8.3	2	50.0	27	28.1	96	21.5	125	22.9
SINGLE STATE LETTERED	0	0.0	5	1.8	18	2.4	23	2.2	1	25.0	9	9.4	44	9.9	54	9.9
DOUBLE STATE LETTERED	0	0.0	3	1.1	5	0.7	8	0.8	0	0.0	2	2.1	13	2.9	15	2.8
OUTER ROAD	0	0.0	2	0.7	6	0.8	8	0.8	0	0.0	0	0.0	8	1.8	8	1.5
COUNTY ROAD	0	0.0	10	3.7	32	4.3	42	4.1	0	0.0	12	12.5	86	19.3	98	18.0
CITY STREET	1	33.3	185	67.5	484	64.3	670	65.1	0	0.0	15	15.6	59	13.2	74	13.6
INTERSTATE LOOP	0	0.0	5	1.8	1	0.1	6	0.6	0	0.0	1	1.0	0	0.0	1	0.2
OTHER [1]	0	0.0	5	1.8	36	4.8	41	4.0	0	0.0	2	2.1	22	4.9	24	4.4
TOTAL	3	100.0	274	100.0	753	100.0	1,030	100.0	4	0.0	96	100.0	446	100.0	546	100.0

[1] "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 2.0.9

1996 POLICE VEHICLE INVOLVED CRASHES
MONTH OF YEAR

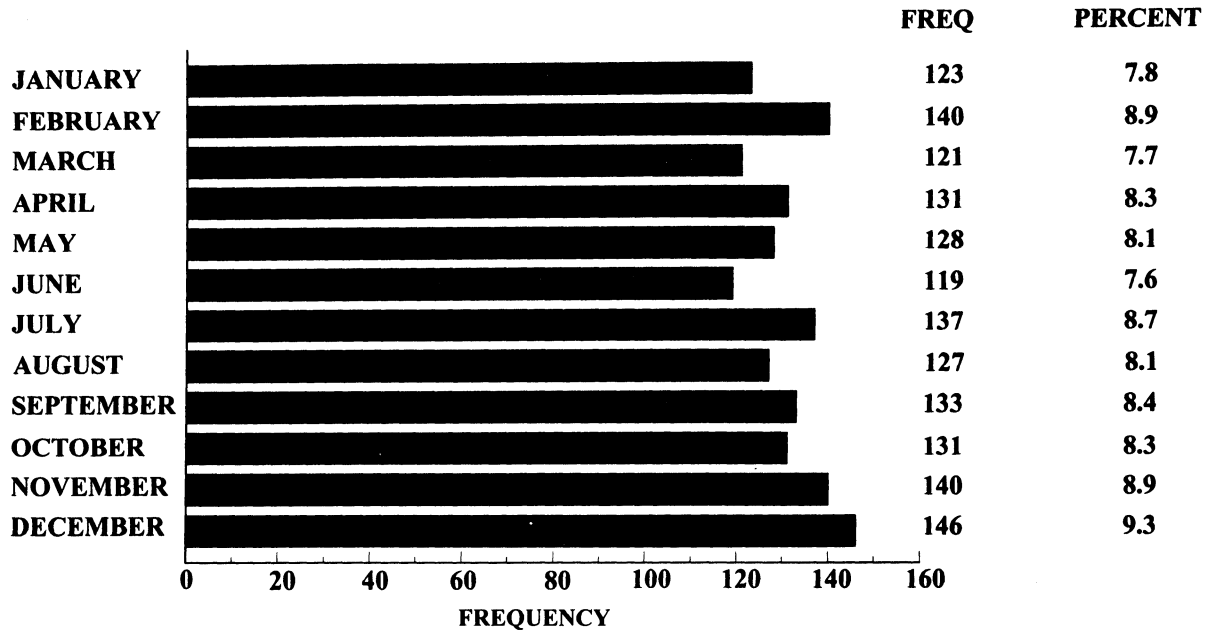
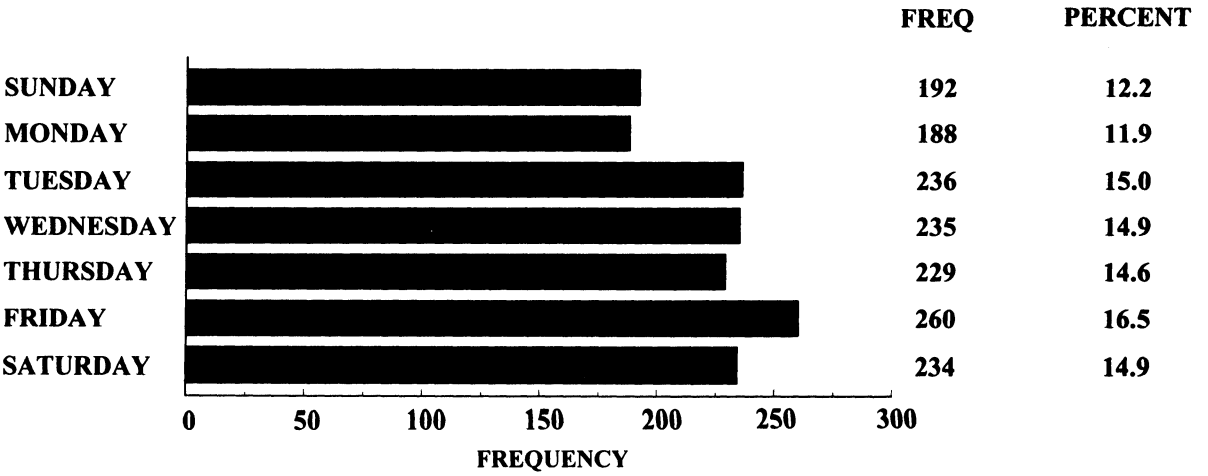


FIGURE 2.0.1

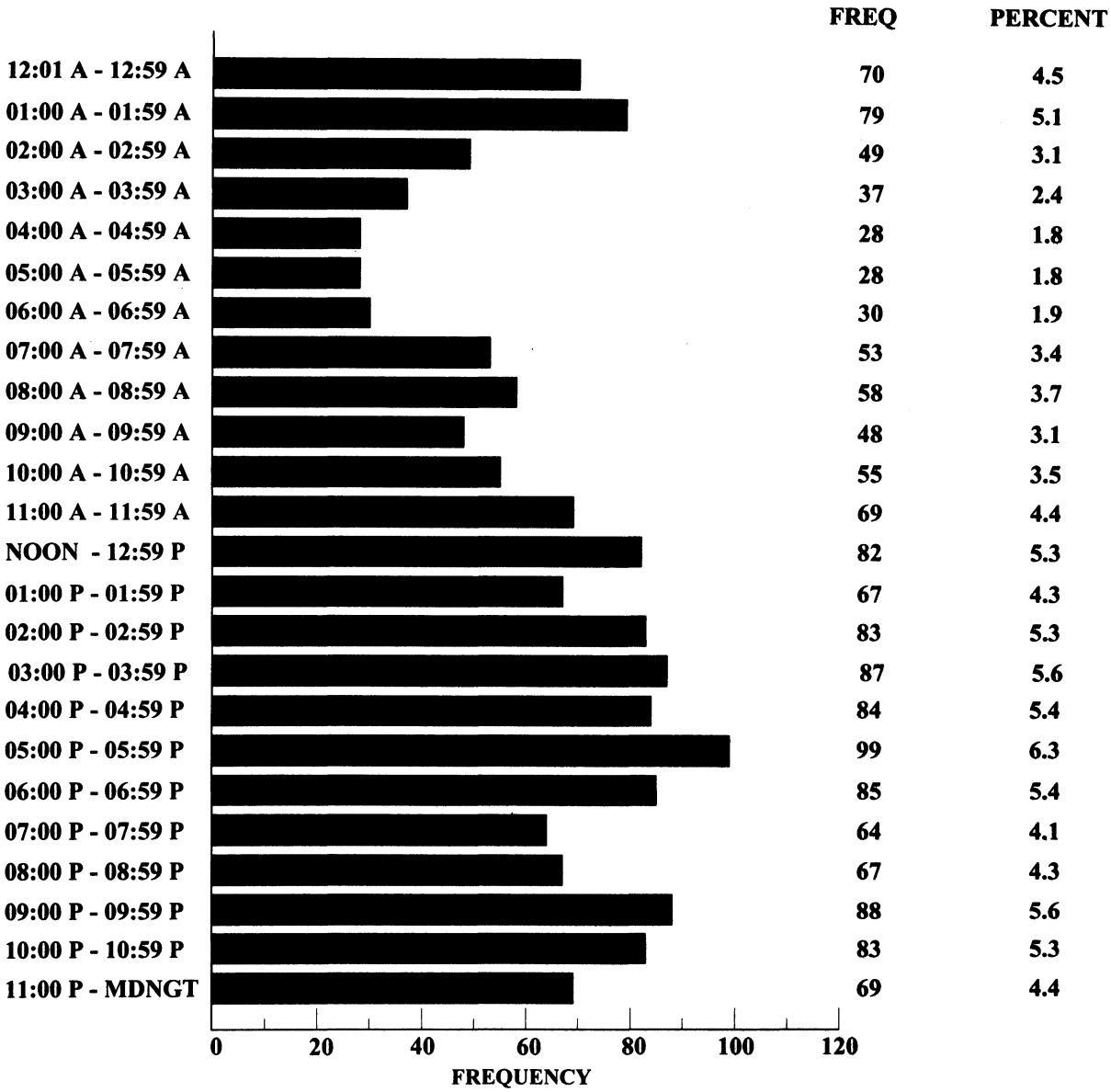
1996 POLICE VEHICLE INVOLVED CRASHES
DAY OF WEEK



UNKNOWN DATA NOT INCLUDED

FIGURE 2.0.2

1996 POLICE VEHICLE INVOLVED CRASHES
HOUR OF DAY



UNKNOWN DATA NOT INCLUDED

FIGURE 2.0.3

1996 MISSOURI POLICE VEHICLE CRASHES

TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION[1]

	FATAL AND PERSONAL INJURY POLICE VEHICLE CRASHES = 377			TOTAL POLICE VEHICLE CRASHES = 1,576		
	DRIVER OF POLICE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL F & PI	DRIVER OF POLICE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL CRASHES
VEHICLE DEFECTS	0.8	1.6	2.4	1.1	1.8	2.9
ACCIDENT AHEAD	1.1	2.4	2.9	1.0	1.6	2.3
CONGESTION AHEAD	1.3	2.7	3.4	1.6	1.9	2.8
EXCEEDING SPEED LIMIT / TOO FAST FOR CONDITIONS	7.7	11.9	19.6	6.3	7.4	13.6
IMPROPER PASSING	0.8	1.3	2.1	0.4	0.7	1.1
VIOLATION OF STOP SIGN	2.9	12.2	15.1	1.0	4.3	5.3
WRONG SIDE NOT PASSING	0.5	2.4	2.9	0.3	1.0	1.3
FOLLOWING TOO CLOSE	0.0	2.7	2.7	0.8	2.2	2.9
IMPROPER SIGNAL	0.3	0.0	0.3	0.1	0.3	0.4
IMPROPER BACKING	0.8	0.3	1.1	1.6	3.0	4.6
IMPROPER TURN	1.3	4.8	6.1	1.2	3.1	4.3
IMPROPER LANE USAGE / CHANGE	1.1	3.7	4.8	0.4	2.5	2.9
WRONG WAY ONE-WAY STREET	0.3	0.3	0.5	0.1	0.2	0.3
IMPROPER START FROM PARK	0.5	0.3	0.8	0.2	0.3	0.5
IMPROPERLY PARKED	0.5	0.3	0.8	0.6	1.0	1.6
FAILED TO YIELD	4.8	20.2	24.9	2.9	11.9	14.7
DRINKING	0.5	9.3	9.8	0.2	6.2	6.4
DRUGS	0.3	0.5	0.8	0.1	0.4	0.5
PHYSICAL IMPAIRMENT	1.1	0.5	1.6	0.4	0.6	1.0
INATTENTION	13.8	40.6	51.7	19.0	31.5	49.4

[1]This table identifies the percentage of crashes involving one or more police vehicles having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his police vehicle as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 1996 Missouri police vehicle crashes, it was found that a police vehicle driver was speeding in 6.3% of the crashes. In 7.4% of the crashes another driver was speeding. In 13.6% of the crashes either a police vehicle driver, another driver, or both drivers were speeding.

TABLE 2.0.10

POLICE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

TYPE OF VEHICLE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AUTOMOBILE	7	100.0	341	89.5	1,126	93.2	1,474	92.4
STATION WAGON	0	0.0	2	0.5	3	0.3	5	0.3
SPORT UTILITY VEHICLE	0	0.0	3	0.8	20	1.7	23	1.4
VAN / SMALL BUS	0	0.0	20	5.3	27	2.2	47	2.9
MOTORCYCLE	0	0.0	10	2.6	6	0.5	16	1.0
BICYCLE	0	0.0	2	0.5	0	0.0	2	0.1
FARM EQUIPMENT	0	0.0	0	0.0	1	0.1	1	0.1
OTHER TRANSPORT DEVICE	0	0.0	0	0.0	3	0.3	3	0.2
PICK-UP TRUCK	0	0.0	3	0.8	16	1.3	19	1.2
OTHER TRUCK	0	0.0	0	0.0	6	0.5	6	0.4
UNKNOWN	0	-	0	-	6	-	6	-
TOTAL	7	100.0	381	100.0	1,214	100.0	1,602	100.0

TABLE 2.0.11

POLICE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

DRIVER INVOLVEMENT BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRIVERLESS	1	14.3	23	6.0	165	13.6	189	11.8
KNOWN DRIVER INVOLVED	6	85.7	358	94.0	1,043	85.9	1,407	87.8
UNKNOWN DRIVER INVOLVED	0	0.0	0	0.0	6	0.5	6	0.4
TOTAL	7	100.0	381	100.0	1,214	100.0	1,602	100.0

TABLE 2.0.12

DRIVERS OF POLICE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

SEX OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
MALE	6	100.0	330	92.2	958	91.9	1,294	92.0
FEMALE	0	0.0	28	7.8	84	8.1	112	8.0
UNKNOWN	0	-	0	-	7	-	7	-
TOTAL	6	100.0	358	100.0	1,049	100.0	1,413	100.0

TABLE 2.0.13

DRIVERS OF POLICE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

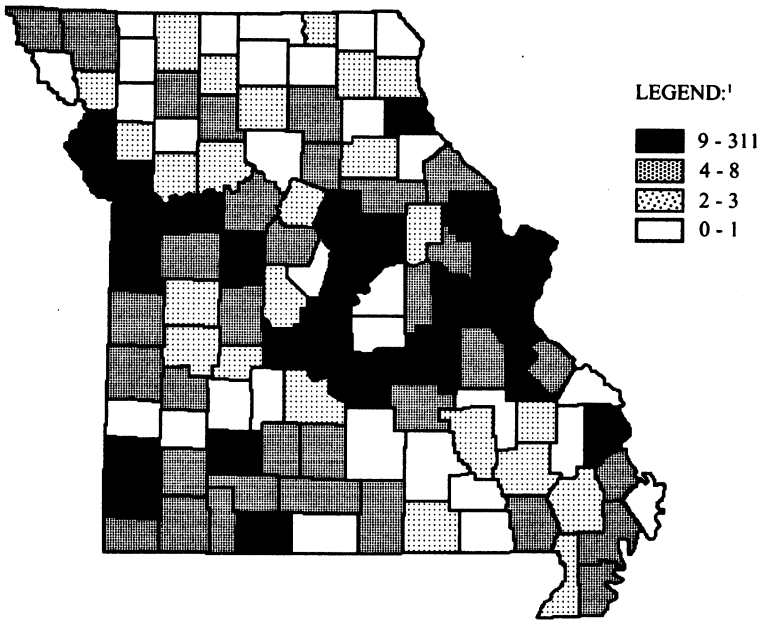
AGE OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AVERAGE AGE OF DRIVER	32.8	-	33.5	-	34.3	-	34.1	-
15 YEARS AND UNDER	0	0.0	1	0.3	0	0.0	1	0.1
16 - 20 YEARS	0	0.0	4	1.1	8	0.8	12	0.9
21 - 25 YEARS	1	16.7	76	21.3	171	16.6	248	17.8
26 - 30 YEARS	1	16.7	92	25.8	293	28.4	386	27.7
31 - 35 YEARS	2	33.3	61	17.1	182	17.7	245	17.6
36 - 40 YEARS	1	16.7	40	11.2	106	10.3	147	10.6
41 - 45 YEARS	1	16.7	37	10.4	118	11.5	156	11.2
46 - 50 YEARS	0	0.0	31	8.7	78	7.6	109	7.8
51 - 55 YEARS	0	0.0	6	1.7	44	4.3	50	3.6
56 - 60 YEARS	0	0.0	4	1.1	18	1.8	22	1.6
61 - 65 YEARS	0	0.0	3	0.8	8	0.8	11	0.8
66 YEARS AND OVER	0	0.0	2	0.6	5	0.5	7	0.5
UNKNOWN	0	-	1	-	18	-	19	-
TOTAL	6	100.0	358	100.0	1,049	100.0	1,413	100.0

TABLE 2.0.14

1996 POLICE VEHICLE INVOLVED CRASHES

COUNTY QUARTILE ANALYSIS



[1] LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

RANK	COUNTY	FREQUENCY	PERCENT	RANK	COUNTY	FREQUENCY	PERCENT
1.0	JACKSON	311	19.7	17.5	NEWTON	14	0.9
2.0	ST. LOUIS	284	18.0	20.0	MILLER	13	0.8
3.0	ST. LOUIS CITY	234	14.8	21.0	ST. FRANCOIS	12	0.8
4.0	ST. CHARLES	62	3.9	24.0	CRAWFORD	10	0.6
5.0	GREENE	52	3.3	24.0	LAFAYETTE	10	0.6
6.0	CLAY	43	2.7	24.0	PETTIS	10	0.6
7.0	JEFFERSON	41	2.6	24.0	PHELPS	10	0.6
8.0	BOONE	28	1.8	24.0	PULASKI	10	0.6
9.0	BUCHANAN	24	1.5	27.5	CALLAWAY	9	0.6
10.0	PLATTE	23	1.5	27.5	TANEY	9	0.6
11.0	CASS	18	1.1				First Quartile
12.5	COLE	17	1.1				
12.5	JASPER	17	1.1				Second Quartile
14.5	CAMDEN	16	1.0	29.5	BUTLER	8	0.5
14.5	LINCOLN	16	1.0	29.5	PEMISCOTT	8	0.5
17.5	CAPE GIRARDEAU	14	0.9	31.5	SCOTT	7	0.4
17.5	FRANKLIN	14	0.9	31.5	WRIGHT	7	0.4
17.5	MARION	14	0.9	35.5	CHRISTIAN	6	0.4

RANK	COUNTY	FREQUENCY	PERCENT
35.5	COOPER	6	0.4
35.5	HOWELL	6	0.4
35.5	STE. GENEVIEVE	6	0.4
35.5	SALINE	6	0.4
35.5	VERNON	6	0.4
44.0	ATCHISON	5	0.3
44.0	BARRY	5	0.3
44.0	BENTON	5	0.3
44.0	DAVIESS	5	0.3
44.0	DENT	5	0.3
44.0	DOUGLAS	5	0.3
44.0	JOHNSON	5	0.3
44.0	LIVINGSTON	5	0.3
44.0	MACON	5	0.3
44.0	STONE	5	0.3
44.0	WARREN	5	0.3
55.5	AUDRAIN	4	0.3
55.5	BATES	4	0.3
55.5	CEDAR	4	0.3
55.5	GASCONADE	4	0.3
55.5	LAWRENCE	4	0.3
55.5	MC DONALD	4	0.3
55.5	NEW MADRID	4	0.3
55.5	NODAWAY	4	0.3
55.5	PIKE	4	0.3
55.5	RANDOLPH	4	0.3
55.5	WASHINGTON	4	0.3
55.5	WEBSTER	4	0.3
			Second Quartile
66.5	ANDREW	3	0.2
66.5	CLINTON	3	0.2
66.5	GRUNDY	3	0.2
66.5	HENRY	3	0.2
66.5	HOWARD	3	0.2
66.5	LACLEDE	3	0.2
66.5	MONTGOMERY	3	0.2
66.5	MORGAN	3	0.2
66.5	REYNOLDS	3	0.2
66.5	STODDARD	3	0.2
78.5	CARROLL	2	0.1
78.5	DUNKLIN	2	0.1
78.5	HARRISON	2	0.1
78.5	HICKORY	2	0.1
78.5	KNOX	2	0.1
78.5	LEWIS	2	0.1
78.5	LINN	2	0.1
78.5	MADISON	2	0.1
78.5	MONROE	2	0.1
78.5	OREGON	2	0.1
78.5	RAY	2	0.1
78.5	ST. CLAIR	2	0.1
78.5	SCHUYLER	2	0.1
78.5	WAYNE	2	0.1
			Third Quartile
			Fourth Quartile
92.5	ADAIR	1	0.1
92.5	CARTER	1	0.1
92.5	CLARK	1	0.1
92.5	DADE	1	0.1
92.5	DALLAS	1	0.1
92.5	HOLT	1	0.1
92.5	IRON	1	0.1
92.5	MERCER	1	0.1
92.5	MISSISSIPPI	1	0.1
92.5	MONITEAU	1	0.1
92.5	OZARK	1	0.1
92.5	PERRY	1	0.1
92.5	RIPLEY	1	0.1
92.5	TEXAS	1	0.1
107.5	BARTON	0	0.0
107.5	BOLLINGER	0	0.0
107.5	CALDWELL	0	0.0
107.5	CHARITON	0	0.0
107.5	DE KALB	0	0.0
107.5	GENTRY	0	0.0
107.5	MARIES	0	0.0
107.5	OSAGE	0	0.0
107.5	POLK	0	0.0
107.5	PUTNAM	0	0.0
107.5	RALLS	0	0.0
107.5	SCOTLAND	0	0.0
107.5	SHANNON	0	0.0
107.5	SHELBY	0	0.0
107.5	SULLIVAN	0	0.0
107.5	WORTH	0	0.0

TABLE 2.0.15

3.0 FIRE VEHICLE INVOLVEMENT

This section presents a series of data displays which identify fire vehicle involvement in Missouri's traffic crash activity. Fire vehicle traffic crashes are defined as any crash in which one or more fire vehicles were directly involved in the incident. Data displays also are provided which describe characteristics of the fire vehicle drivers involved in these traffic crashes.

1996 SUMMARY ANALYSIS

- In 1996, there were 213 traffic crashes involving one or more fire vehicles in the State of Missouri. Two persons were killed and 74 were injured in these crashes.
- In 36.2% of the traffic crashes involving fire vehicles, the fire vehicle was on an emergency run at the time of the incident.
- In 1996, one person was killed or injured in a fire vehicle related crash every 4.8 days in the State of Missouri.
- Of all 1996 crashes involving fire vehicles, the first harmful event in 61.0% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 22.1% of the cases, it involved a motor vehicle striking a parked vehicle. In 12.7% of the cases, the vehicle struck a fixed object.
- Of all 1996 crashes involving fire vehicles, 74.7% occurred in an urban area of the State and 25.3% occurred in a rural area.
- Of all fire vehicle drivers involved in 1996 traffic crashes, 99.0% were male and 1.0% were female. The average age of the fire vehicle driver was 37.4 years.

1996 FIRE VEHICLE INVOLVED CRASHES

EMERGENCY RUN STATUS

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	TOTAL NUMBER[1] KILLED	TOTAL NUMBER[1] INJURED	FIRE VEHICLE DRIVERS/PASSENGERS[2] KILLED	FIRE VEHICLE DRIVERS/PASSENGERS[2] INJURED
FIRE VEHICLE ON RUN	1	50.0	23	57.5	53	31.0	77	36.2	1	42	0	17
FIRE VEHICLE NOT ON RUN	1	50.0	17	42.5	118	69.0	136	63.8	1	32	0	11
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0	2	74	0	28

[1]This statistic indicates the total number of persons killed and injured in a crash where one or more fire vehicles were involved.

[2]This statistic indicates the number of fire vehicle drivers and passengers killed and injured.

TABLE 3.0.1

1995 and 1996 FIRE VEHICLE INVOLVED CRASH ANALYSIS

	1995	1996	RATE OF CHANGE
FATAL	0	2	+ (2)
PERSONAL INJURY	29	40	+ 37.9
PROPERTY DAMAGE	141	171	+ 21.3
TOTAL	170	213	+ 25.3

TABLE 3.0.2

1996 FIRE VEHICLE INVOLVED CRASHES

CRASH TYPE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ANIMAL	0	0.0	0	0.0	1	0.6	1	0.5
BICYCLIST	0	0.0	0	0.0	0	0.0	0	0.0
FIXED OBJECT	0	0.0	3	7.5	24	14.0	27	12.7
OTHER OBJECT	1	50.0	0	0.0	2	1.2	3	1.4
PEDESTRIAN	0	0.0	2	5.0	0	0.0	2	0.9
TRAIN	0	0.0	0	0.0	0	0.0	0	0.0
VEHICLE IN TRANSPORT	1	50.0	33	82.5	96	56.1	130	61.0
VEHICLE ON OTHER ROADWAY	0	0.0	0	0.0	0	0.0	0	0.0
PARKED VEHICLE	0	0.0	0	0.0	47	27.5	47	22.1
NON-COLLISION OVERTURN	0	0.0	1	2.5	1	0.6	2	0.9
NON-COLLISION OTHER	0	0.0	1	2.5	0	0.0	1	0.5
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0

TABLE 3.0.3

1996 FIRE VEHICLE INVOLVED CRASHES

AREA CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
URBAN	2	100.0	25	62.5	132	77.2	159	74.7
RURAL	0	0.0	15	37.5	39	22.8	54	25.3
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0

TABLE 3.0.4

1996 FIRE VEHICLE INVOLVED CRASHES

ROAD CURVATURE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
STRAIGHT	2	100.0	35	89.7	160	93.6	197	92.9
CURVE	0	0.0	4	10.3	11	6.4	15	7.1
UNKNOWN	0	-	1	-	0	-	1	-
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0

TABLE 3.0.5

1996 FIRE VEHICLE INVOLVED CRASHES

ROAD INCLINE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
LEVEL	2	100.0	25	64.1	128	75.7	155	73.8
HILL	0	0.0	14	35.9	40	23.7	54	25.7
CREST	0	0.0	0	0.0	1	0.6	1	0.5
UNKNOWN	0	-	1	-	2	-	3	-
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0

TABLE 3.0.6

1996 FIRE VEHICLE INVOLVED CRASHES

ROAD CONDITIONS BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRY	2	100.0	32	82.1	133	77.8	167	78.8
WET	0	0.0	4	10.3	30	17.5	34	16.0
SNOW	0	0.0	1	2.6	1	0.6	2	0.9
ICE	0	0.0	2	5.1	7	4.1	9	4.3
MUD	0	0.0	0	0.0	0	0.0	0	0.0
UNKNOWN	0	-	1	-	0	-	1	-
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0

TABLE 3.0.7

1996 FIRE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	1	50.0	5	12.5	9	5.3	15	7.0
U.S. HIGHWAY	0	0.0	4	10.0	9	5.3	13	6.1
STATE NUMBERED	1	50.0	7	17.5	20	11.7	28	13.2
SINGLE STATE LETTERED	0	0.0	4	10.0	6	3.5	10	4.7
DOUBLE STATE LETTERED	0	0.0	0	0.0	1	0.6	1	0.5
OUTER ROAD	0	0.0	0	0.0	0	0.0	0	0.0
COUNTY ROAD	0	0.0	4	10.0	20	11.7	24	11.3
CITY STREET	0	0.0	16	40.0	102	59.7	118	55.4
INTERSTATE LOOP	0	0.0	0	0.0	1	0.6	1	0.5
OTHER[1]	0	0.0	0	0.0	3	1.8	3	1.4
TOTAL	2	100.0	40	100.0	171	100.0	213	100.0

[1] "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 3.0.8

1996 FIRE VEHICLE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

	URBAN								RURAL							
	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	1	50.0	5	20.0	7	5.3	13	8.2	0	0.0	0	0.0	2	5.1	2	3.7
U.S. HIGHWAY	0	0.0	3	12.0	6	4.6	9	5.7	0	0.0	1	6.7	3	7.7	4	7.4
STATE NUMBERED	1	50.0	2	8.0	11	8.3	14	8.8	0	0.0	5	33.3	9	23.1	14	25.9
SINGLE STATE LETTERED	0	0.0	0	0.0	2	1.5	2	1.3	0	0.0	4	26.7	4	10.3	8	14.8
DOUBLE STATE LETTERED	0	0.0	0	0.0	1	0.8	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
OUTER ROAD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COUNTY ROAD	0	0.0	1	4.0	5	3.8	6	3.8	0	0.0	3	20.0	15	38.5	18	33.3
CITY STREET	0	0.0	14	56.0	97	73.5	111	69.8	0	0.0	2	13.3	5	12.8	7	13.0
INTERSTATE LOOP	0	0.0	0	0.0	1	0.8	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
OTHER [1]	0	0.0	0	0.0	2	1.5	2	1.3	0	0.0	0	0.0	1	2.6	1	1.9
TOTAL	2	100.0	25	100.0	132	100.0	159	100.0	0	0.0	15	100.0	39	100.0	54	100.0

[1] "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 3.0.9

1996 FIRE VEHICLE INVOLVED CRASHES
MONTH OF YEAR

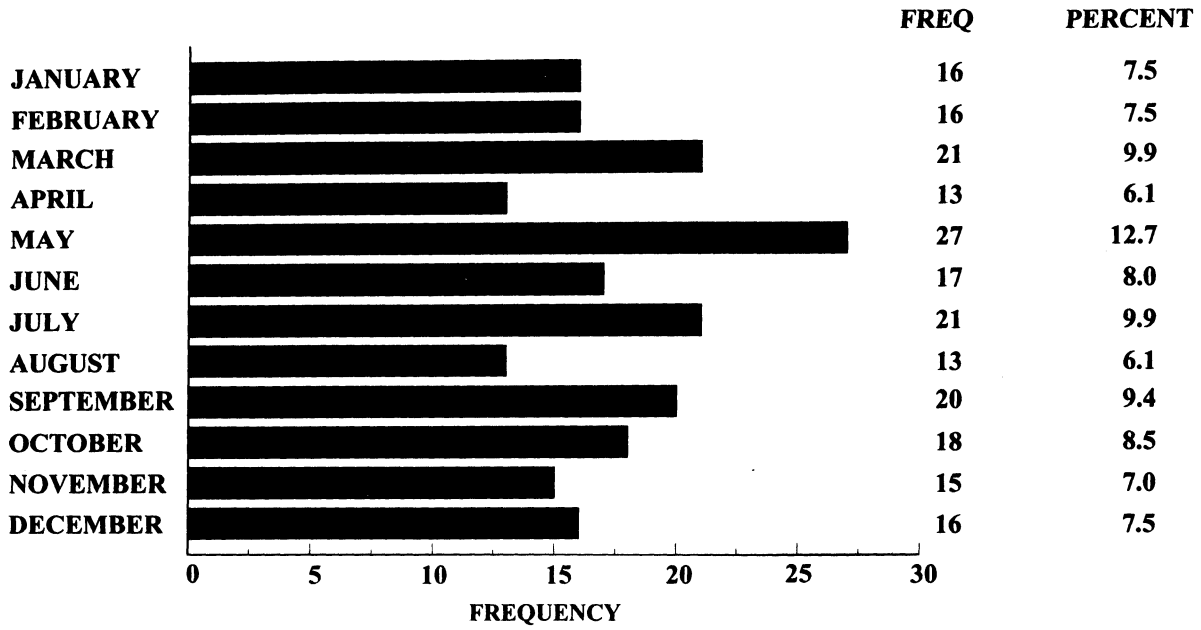


FIGURE 3.0.1

1996 FIRE VEHICLE INVOLVED CRASHES
DAY OF WEEK

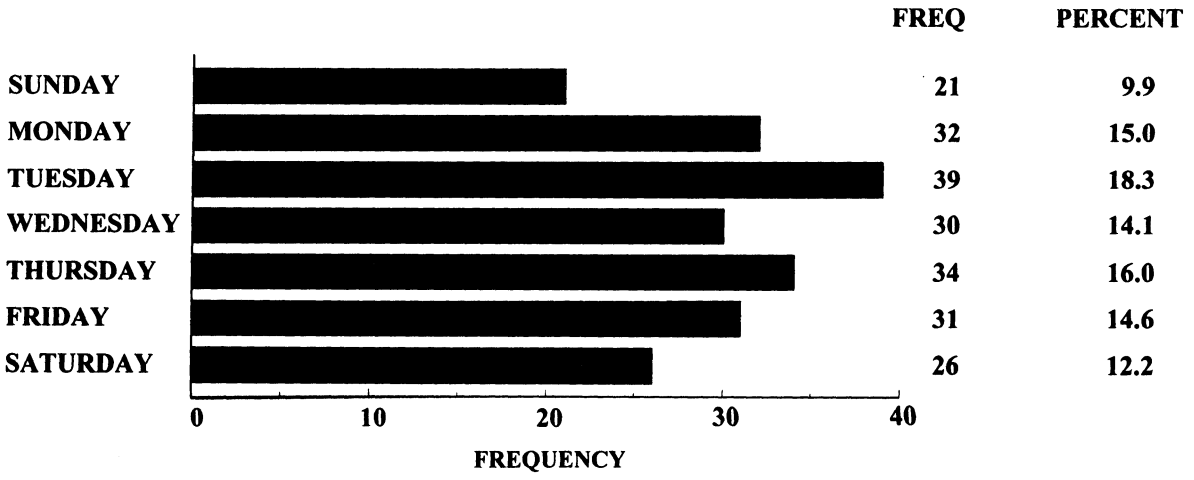
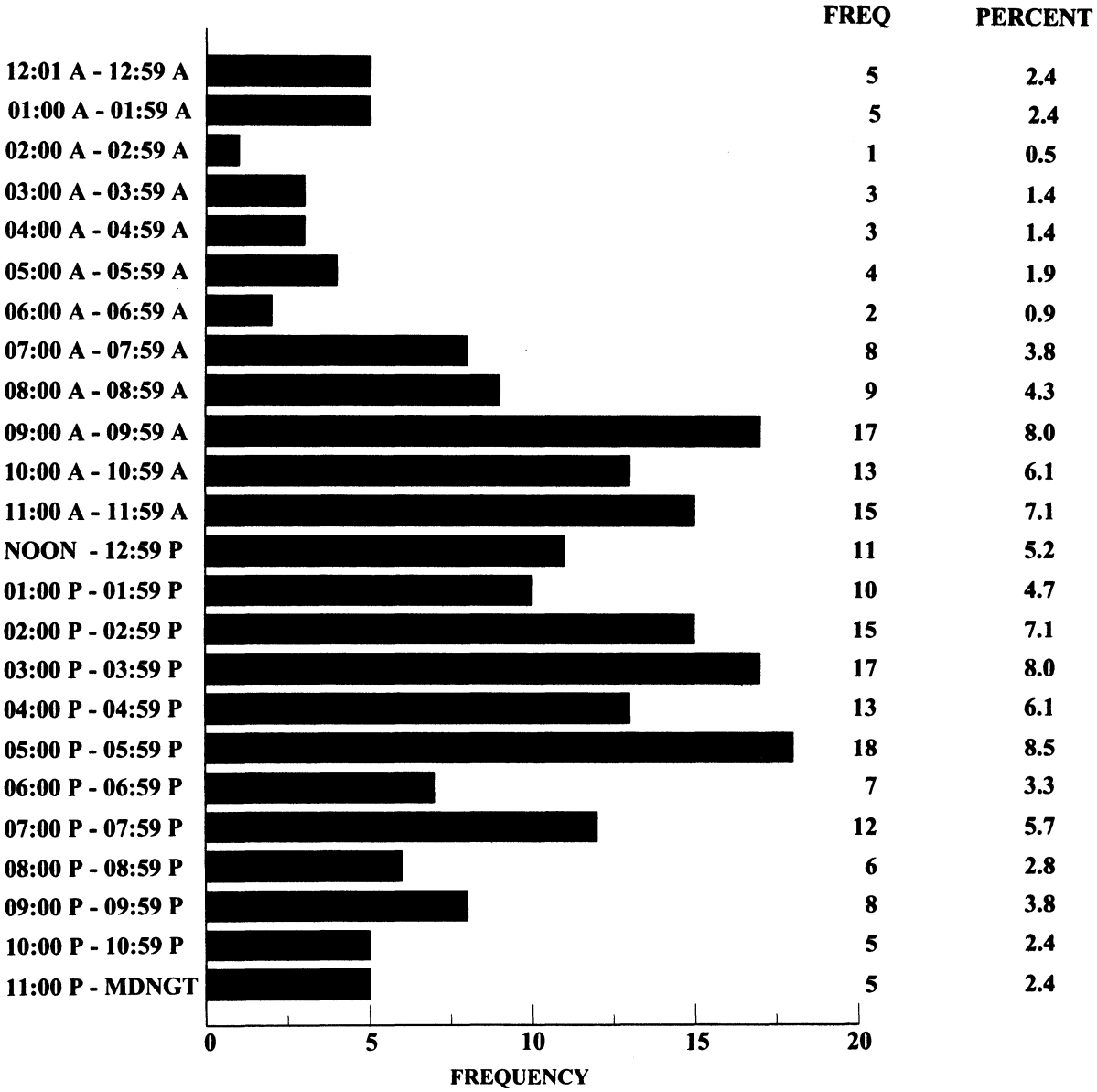


FIGURE 3.0.2

1996 FIRE VEHICLE INVOLVED CRASHES
HOUR OF DAY



UNKNOWN DATA NOT INCLUDED

FIGURE 3.0.3

1996 MISSOURI FIRE VEHICLE CRASHES

TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION[1]

	FATAL AND PERSONAL INJURY FIRE VEHICLE CRASHES = 42			TOTAL FIRE VEHICLE CRASHES = 213		
	DRIVER OF FIRE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL F & PI	DRIVER OF FIRE VEHICLE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL CRASHES
VEHICLE DEFECTS	7.1	0.0	7.1	6.6	0.5	7.0
ACCIDENT AHEAD	2.4	4.8	4.8	1.4	1.4	1.9
CONGESTION AHEAD	0.0	4.8	4.8	1.9	2.3	4.2
EXCEEDING SPEED LIMIT / TOO FAST FOR CONDITIONS	11.9	9.5	21.4	3.8	5.6	9.4
IMPROPER PASSING	0.0	0.0	0.0	0.0	2.3	2.3
VIOLATION OF STOP SIGN	4.8	4.8	9.5	1.4	2.8	4.2
WRONG SIDE NOT PASSING	2.4	0.0	2.4	1.4	0.5	1.9
FOLLOWING TOO CLOSE	0.0	4.8	4.8	0.5	5.2	5.6
IMPROPER SIGNAL	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPER BACKING	0.0	0.0	0.0	2.8	0.5	3.3
IMPROPER TURN	0.0	2.4	2.4	1.4	0.9	2.3
IMPROPER LANE USAGE / CHANGE	0.0	0.0	0.0	0.5	0.9	1.4
WRONG WAY ONE-WAY STREET	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPER START FROM PARK	0.0	2.4	2.4	0.0	0.5	0.5
IMPROPERLY PARKED	0.0	0.0	0.0	0.9	0.9	1.9
FAILED TO YIELD	16.7	28.6	42.9	4.7	16.4	20.2
DRINKING	2.4	4.8	7.1	0.9	1.4	2.3
DRUGS	0.0	2.4	2.4	0.0	0.9	0.9
PHYSICAL IMPAIRMENT	2.4	0.0	2.4	0.5	0.0	0.5
INATTENTION	23.8	38.1	50.0	27.7	28.6	51.2

[1]This table identifies the percentage of crashes involving one or more fire vehicles having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his fire vehicle as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 1996 Missouri fire vehicle crashes, it was found that a fire vehicle driver was speeding in 3.8% of the crashes. In 5.6% of the crashes another driver was speeding. In 9.4% of the crashes either a fire vehicle driver, another driver, or both drivers were speeding.

TABLE 3.0.10

FIRE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

TYPE OF VEHICLE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AUTOMOBILE	0	0.0	8	20.0	16	9.2	24	11.1
SPORT UTILITY VEHICLE	0	0.0	4	10.0	10	5.8	14	6.5
VAN / SMALL BUS	0	0.0	1	2.5	5	2.9	6	2.8
OTHER TRANSPORT DEVICE	0	0.0	4	10.0	23	13.2	27	12.5
PICK-UP TRUCK	0	0.0	4	10.0	15	8.6	19	8.8
OTHER TRUCK	2	100.0	19	47.5	105	60.3	126	58.3
UNKNOWN	0	-	0	-	0	-	0	-
TOTAL	2	100.0	40	100.0	174	100.0	216	100.0

TABLE 3.0.11

FIRE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

DRIVER INVOLVEMENT BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRIVERLESS	1	50.0	2	5.0	20	11.5	23	10.7
KNOWN DRIVER INVOLVED	1	50.0	38	95.0	153	87.9	192	88.9
UNKNOWN DRIVER INVOLVED	0	0.0	0	0.0	1	0.6	1	0.5
TOTAL	2	100.0	40	100.0	174	100.0	216	100.0

TABLE 3.0.12

DRIVERS OF FIRE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

SEX OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
MALE	1	100.0	36	94.7	153	100.0	190	99.0
FEMALE	0	0.0	2	5.3	0	0.0	2	1.0
UNKNOWN	0	-	0	-	1	-	1	-
TOTAL	1	100.0	38	100.0	154	100.0	193	100.0

TABLE 3.0.13

DRIVERS OF FIRE VEHICLES INVOLVED IN 1996 MISSOURI CRASHES

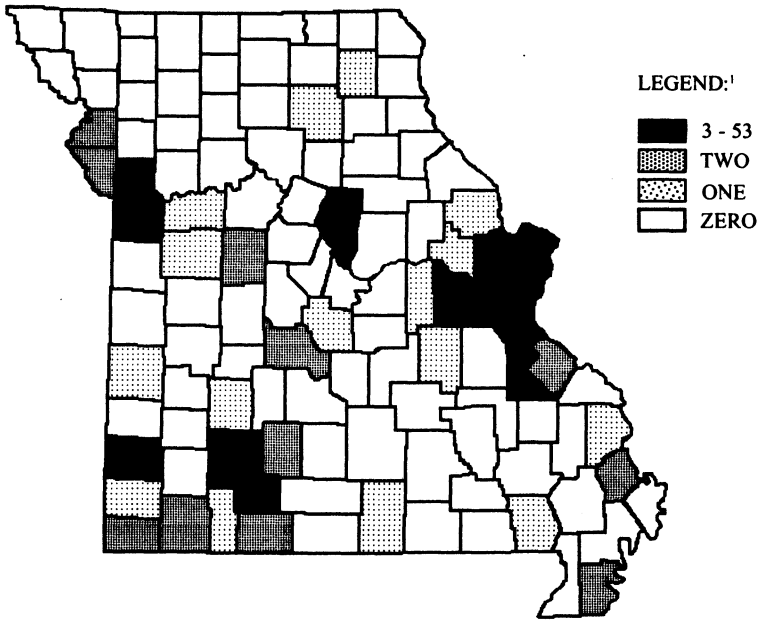
AGE OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AVERAGE AGE OF DRIVER	46.0	-	39.3	-	36.8	-	37.4	-
15 YEARS AND UNDER	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20 YEARS	0	0.0	1	2.6	4	2.7	5	2.7
21 - 25 YEARS	0	0.0	3	7.9	14	9.3	17	9.0
26 - 30 YEARS	0	0.0	6	15.8	26	17.3	32	16.9
31 - 35 YEARS	0	0.0	5	13.2	27	18.0	32	16.9
36 - 40 YEARS	0	0.0	6	15.8	29	19.3	35	18.5
41 - 45 YEARS	0	0.0	9	23.7	25	16.7	34	18.0
46 - 50 YEARS	1	100.0	2	5.3	10	6.7	13	6.9
51 - 55 YEARS	0	0.0	3	7.9	10	6.7	13	6.9
56 - 60 YEARS	0	0.0	1	2.6	3	2.0	4	2.1
61 - 65 YEARS	0	0.0	0	0.0	1	0.7	1	0.5
66 YEARS AND OVER	0	0.0	2	5.3	1	0.7	3	1.6
UNKNOWN	0	-	0	-	4	-	4	-
TOTAL	1	100.0	38	100.0	154	100.0	193	100.0

TABLE 3.0.14

1996 FIRE VEHICLE INVOLVED CRASHES

COUNTY QUARTILE ANALYSIS



[1] LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

RANK	COUNTY	FREQUENCY	PERCENT
1.0	JACKSON	53	24.9
2.0	ST. LOUIS CITY	36	16.9
3.0	ST. LOUIS	35	16.4
4.5	JEFFERSON	10	4.7
4.5	ST. CHARLES	10	4.7
6.0	GREENE	8	3.8
7.0	ST. FRANCOIS	5	2.3
9.0	BOONE	4	1.9
9.0	CHRISTIAN	4	1.9
9.0	CLAY	4	1.9
11.5	FRANKLIN	3	1.4
11.5	JASPER	3	1.4
			First Quartile
18.0	BARRY	2	0.9
18.0	BUCHANAN	2	0.9
18.0	CAMDEN	2	0.9
18.0	MC DONALD	2	0.9
18.0	PEMISCOTT	2	0.9
18.0	PETTIS	2	0.9
18.0	PLATTE	2	0.9
18.0	STE. GENEVIEVE	2	0.9
18.0	SCOTT	2	0.9
18.0	TANEY	2	0.9
18.0	WEBSTER	2	0.9
			Second Quartile
			Third Quartile
31.5	BUTLER	1	0.5
31.5	CAPE GIRARDEAU	1	0.5
31.5	CRAWFORD	1	0.5
31.5	GASCONADE	1	0.5
31.5	HOWELL	1	0.5
31.5	JOHNSON	1	0.5
31.5	KNOX	1	0.5
31.5	LAFAYETTE	1	0.5
31.5	LINCOLN	1	0.5

RANK	COUNTY	FREQUENCY	PERCENT
31.5	MACON	1	0.5
31.5	MILLER	1	0.5
31.5	NEWTON	1	0.5
31.5	POLK	1	0.5
31.5	STONE	1	0.5
31.5	VERNON	1	0.5
31.5	WARREN	1	0.5
			Third Quartile
			Fourth Quartile
77.5	ADAIR	0	0.0
77.5	ANDREW	0	0.0
77.5	ATCHISON	0	0.0
77.5	AUDRAIN	0	0.0
77.5	BARTON	0	0.0
77.5	BATES	0	0.0
77.5	BENTON	0	0.0
77.5	BOLLINGER	0	0.0
77.5	CALDWELL	0	0.0
77.5	CALLAWAY	0	0.0
77.5	CARROLL	0	0.0
77.5	CARTER	0	0.0
77.5	CASS	0	0.0
77.5	CEDAR	0	0.0
77.5	CHARITON	0	0.0
77.5	CLARK	0	0.0
77.5	CLINTON	0	0.0
77.5	COLE	0	0.0
77.5	COOPER	0	0.0
77.5	DADE	0	0.0
77.5	DALLAS	0	0.0
77.5	DAVIESS	0	0.0
77.5	DE KALB	0	0.0
77.5	DENT	0	0.0
77.5	DOUGLAS	0	0.0
77.5	DUNKLIN	0	0.0
77.5	GENTRY	0	0.0
77.5	GRUNDY	0	0.0
77.5	HARRISON	0	0.0
77.5	HENRY	0	0.0
77.5	HICKORY	0	0.0
77.5	HOLT	0	0.0
77.5	HOWARD	0	0.0
77.5	IRON	0	0.0
77.5	LACLEDE	0	0.0
77.5	LAWRENCE	0	0.0
77.5	LEWIS	0	0.0
77.5	LINN	0	0.0
77.5	LIVINGSTON	0	0.0
77.5	MADISON	0	0.0
77.5	MARIES	0	0.0
77.5	MARION	0	0.0
77.5	MERCER	0	0.0
77.5	MISSISSIPPI	0	0.0
77.5	MONITEAU	0	0.0
77.5	MONROE	0	0.0
77.5	MONTGOMERY	0	0.0
77.5	MORGAN	0	0.0
77.5	NEW MADRID	0	0.0
77.5	NODAWAY	0	0.0
77.5	OREGON	0	0.0
77.5	OSAGE	0	0.0
77.5	OZARK	0	0.0
77.5	PERRY	0	0.0
77.5	PHELPS	0	0.0
77.5	PIKE	0	0.0
77.5	PULASKI	0	0.0
77.5	PUTNAM	0	0.0
77.5	RALLS	0	0.0
77.5	RANDOLPH	0	0.0
77.5	RAY	0	0.0
77.5	REYNOLDS	0	0.0
77.5	RIPLEY	0	0.0
77.5	ST. CLAIR	0	0.0
77.5	SALINE	0	0.0
77.5	SCHUYLER	0	0.0
77.5	SCOTLAND	0	0.0
77.5	SHANNON	0	0.0
77.5	SHELBY	0	0.0
77.5	STODDARD	0	0.0
77.5	SULLIVAN	0	0.0
77.5	TEXAS	0	0.0
77.5	WASHINGTON	0	0.0
77.5	WAYNE	0	0.0
77.5	WORTH	0	0.0
77.5	WRIGHT	0	0.0

TABLE 3.0.15

4.0 AMBULANCE INVOLVEMENT

This section presents a series of data displays which identify ambulance involvement in Missouri's traffic crash activity. Ambulance traffic crashes are defined as any crash in which one or more ambulances were directly involved in the incident. Data displays also are provided which describe characteristics of the ambulance drivers involved in these traffic crashes.

1996 SUMMARY ANALYSIS

- In 1996, there were196 traffic crashes involving one or more ambulances in the State of Missouri. No persons were killed and 107 were injured in these crashes.
- In 33.7% of the traffic crashes involving ambulances, the ambulance was on an emergency run at the time of the incident.
- In 1996, one person was injured in an ambulance related crash every 3.4 days in the State of Missouri.
- Of all 1996 crashes involving ambulances, the first harmful event in 74.5% of the cases involved one motor vehicle in transport striking another motor vehicle in transport. In 11.2% of the cases, it involved a motor vehicle striking a parked vehicle. In 6.6% of the cases, the vehicle struck a fixed object.
- Of all 1996 crashes involving ambulances, 75.0% occurred in an urban area of the State and 25.0% occurred in a rural area.
- Of all ambulance drivers involved in 1996 traffic crashes, 75.7% were male and 24.3% were female. The average age of the ambulance driver was 31.5 years.

1996 AMBULANCE INVOLVED CRASHES

EMERGENCY RUN STATUS

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	TOTAL NUMBER[1] KILLED	TOTAL NUMBER[1] INJURED	AMBULANCE DRIVERS/PASSENGERS[2] KILLED	AMBULANCE DRIVERS/PASSENGERS[2] INJURED
AMBULANCE ON RUN	0	0.0	26	46.4	40	28.6	66	33.7	0	47	0	27
AMBULANCE NOT ON RUN	0	0.0	30	53.6	100	71.4	130	66.3	0	60	0	19
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0	0	107	0	46

[1]This statistic indicates the total number of persons killed and injured in a crash where one or more ambulances were involved.

[2]This statistic indicates the number of ambulance drivers and passengers killed and injured.

TABLE 4.0.1

1995 and 1996 AMBULANCE INVOLVED CRASH ANALYSIS

	1995	1996	RATE OF CHANGE
FATAL	2	0	- 100.0
PERSONAL INJURY	39	56	+ 43.6
PROPERTY DAMAGE	130	140	+ 7.7
TOTAL	171	196	+ 14.6

TABLE 4.0.2

1996 AMBULANCE INVOLVED CRASHES

CRASH TYPE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
ANIMAL	0	0.0	0	0.0	8	5.7	8	4.1
BICYCLIST	0	0.0	0	0.0	0	0.0	0	0.0
FIXED OBJECT	0	0.0	2	3.6	11	7.9	13	6.6
OTHER OBJECT	0	0.0	0	0.0	2	1.4	2	1.0
PEDESTRIAN	0	0.0	0	0.0	0	0.0	0	0.0
TRAIN	0	0.0	0	0.0	0	0.0	0	0.0
VEHICLE IN TRANSPORT	0	0.0	49	87.5	97	69.3	146	74.5
VEHICLE ON OTHER ROADWAY	0	0.0	1	1.8	0	0.0	1	0.5
PARKED VEHICLE	0	0.0	4	7.1	18	12.9	22	11.2
NON-COLLISION OVERTURN	0	0.0	0	0.0	2	1.4	2	1.0
NON-COLLISION OTHER	0	0.0	0	0.0	2	1.4	2	1.0
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0

TABLE 4.0.3

1996 AMBULANCE INVOLVED CRASHES

AREA CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
URBAN	0	0.0	47	83.9	100	71.4	147	75.0
RURAL	0	0.0	9	16.1	40	28.6	49	25.0
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0

TABLE 4.0.4

1996 AMBULANCE INVOLVED CRASHES

ROAD CURVATURE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
STRAIGHT	0	0.0	49	87.5	120	87.0	169	87.1
CURVE	0	0.0	7	12.5	18	13.0	25	12.9
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0

TABLE 4.0.5

1996 AMBULANCE INVOLVED CRASHES

ROAD INCLINE BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
LEVEL	0	0.0	43	76.8	108	78.3	151	77.8
HILL	0	0.0	12	21.4	29	21.0	41	21.1
CREST	0	0.0	1	1.8	1	0.7	2	1.0
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0

TABLE 4.0.6

1996 AMBULANCE INVOLVED CRASHES

ROAD CONDITIONS BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRY	0	0.0	39	69.6	105	75.5	144	73.9
WET	0	0.0	10	17.9	29	20.9	39	20.0
SNOW	0	0.0	2	3.6	0	0.0	2	1.0
ICE	0	0.0	5	8.9	5	3.6	10	5.1
MUD	0	0.0	0	0.0	0	0.0	0	0.0
UNKNOWN	0	-	0	-	1	-	1	-
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0

TABLE 4.0.7

1996 AMBULANCE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	9	16.1	7	5.0	16	8.2
U.S. HIGHWAY	0	0.0	5	8.9	14	10.0	19	9.7
STATE NUMBERED	0	0.0	11	19.6	21	15.0	32	16.3
SINGLE STATE LETTERED	0	0.0	1	1.8	5	3.6	6	3.1
DOUBLE STATE LETTERED	0	0.0	2	3.6	4	2.9	6	3.1
OUTER ROAD	0	0.0	0	0.0	0	0.0	0	0.0
COUNTY ROAD	0	0.0	1	1.8	6	4.3	7	3.6
CITY STREET	0	0.0	27	48.2	77	55.0	104	53.1
INTERSTATE LOOP	0	0.0	0	0.0	0	0.0	0	0.0
OTHER[1]	0	0.0	0	0.0	6	4.3	6	3.1
TOTAL	0	0.0	56	100.0	140	100.0	196	100.0

[1] "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 4.0.8

1996 AMBULANCE INVOLVED CRASHES

HIGHWAY CLASSIFICATION BY AREA CLASSIFICATION AND CRASH SEVERITY

	URBAN								RURAL							
	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
INTERSTATE	0	0.0	8	17.0	6	6.0	14	9.5	0	0.0	1	11.1	1	2.5	2	4.1
U.S. HIGHWAY	0	0.0	3	6.4	5	5.0	8	5.4	0	0.0	2	22.2	9	22.5	11	22.5
STATE NUMBERED	0	0.0	5	10.6	10	10.0	15	10.2	0	0.0	6	66.7	11	27.5	17	34.7
SINGLE STATE LETTERED	0	0.0	1	2.1	1	1.0	2	1.4	0	0.0	0	0.0	4	10.0	4	8.2
DOUBLE STATE LETTERED	0	0.0	2	4.3	1	1.0	3	2.0	0	0.0	0	0.0	3	7.5	3	6.1
OUTER ROAD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
COUNTY ROAD	0	0.0	1	2.1	3	3.0	4	2.7	0	0.0	0	0.0	3	7.5	3	6.1
CITY STREET	0	0.0	27	57.5	72	72.0	99	67.4	0	0.0	0	0.0	5	12.5	5	10.2
INTERSTATE LOOP	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
OTHER [1]	0	0.0	0	0.0	2	2.0	2	1.4	0	0.0	0	0.0	4	10.0	4	8.2
TOTAL	0	0.0	47	100.0	100	100.0	147	100.0	0	0.0	9	100.0	40	100.0	49	100.0

[1] "Other" includes types of roads that are maintained by the State as well as by local jurisdictions.

TABLE 4.0.9

1996 AMBULANCE INVOLVED CRASHES
MONTH OF YEAR

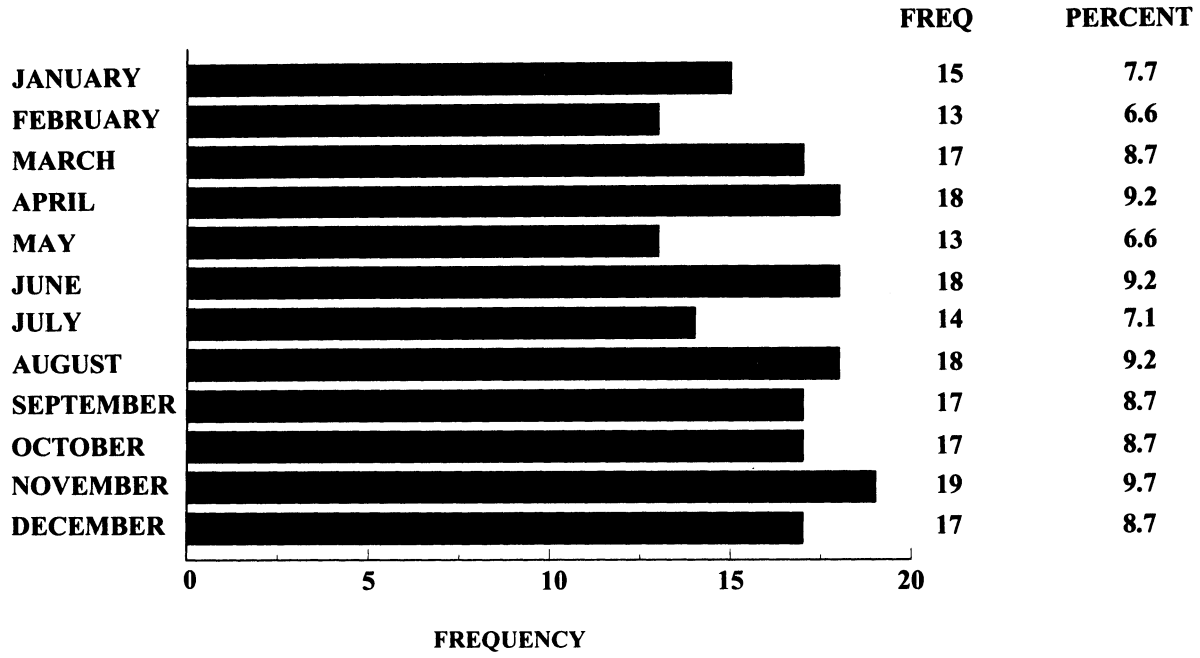


FIGURE 4.0.1

1996 AMBULANCE INVOLVED CRASHES
DAY OF WEEK

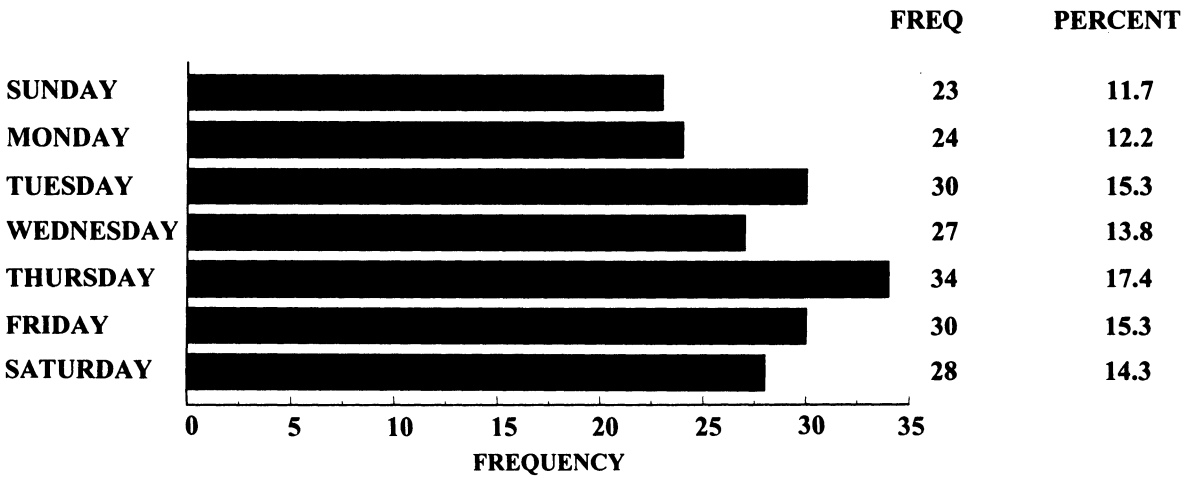
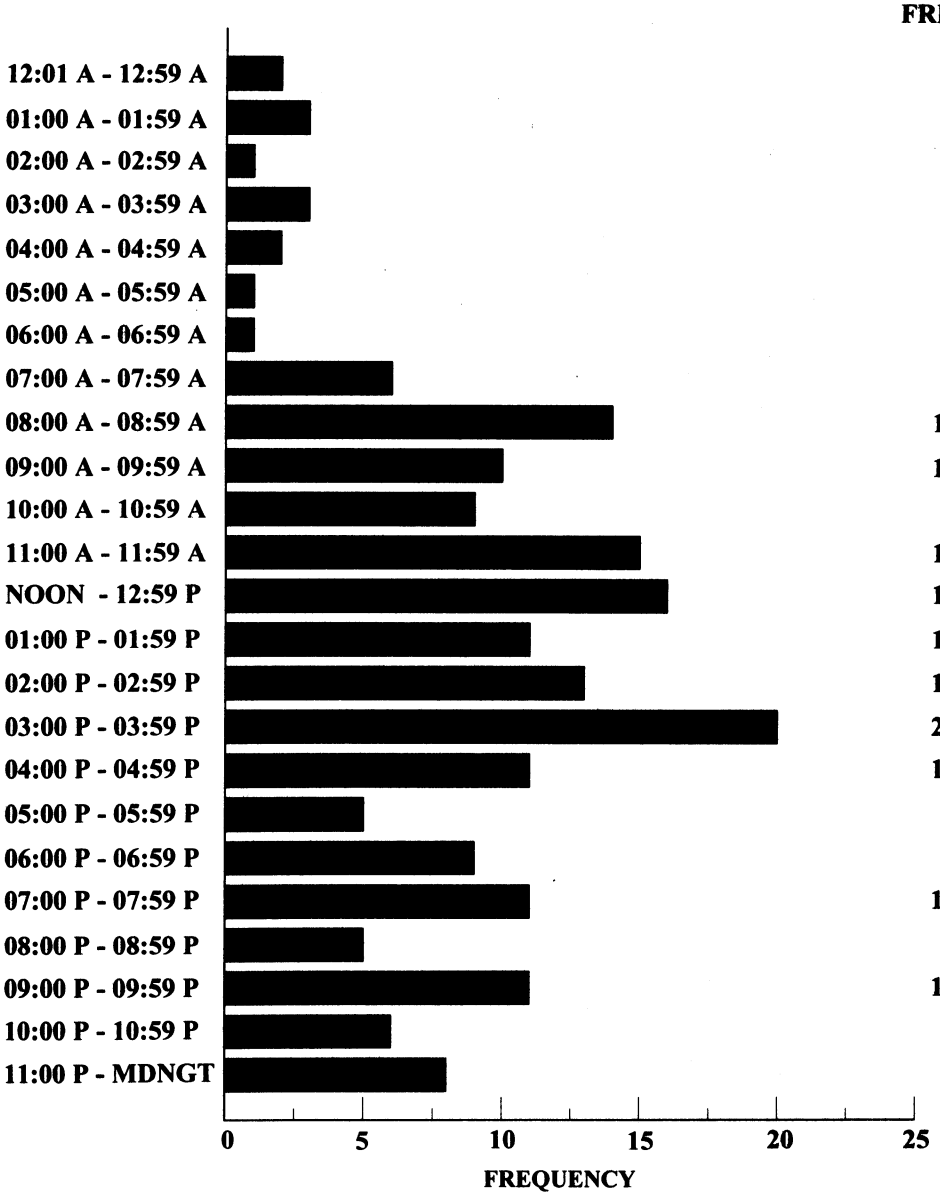


FIGURE 4.0.2

1996 AMBULANCE INVOLVED CRASHES
HOUR OF DAY



UNKNOWN DATA NOT INCLUDED

FIGURE 4.0.3

1996 MISSOURI AMBULANCE CRASHES

TYPE OF CIRCUMSTANCE INVOLVED BY CRASH SEVERITY AND PERSON CLASSIFICATION[1]

	FATAL AND PERSONAL INJURY AMBULANCE CRASHES = 56			TOTAL AMBULANCE CRASHES = 196		
	DRIVER OF AMBULANCE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL F & PI	DRIVER OF AMBULANCE/ VEHICLE	OTHER DRIVER/ VEHICLE/ PEDESTRIAN	TOTAL CRASHES
VEHICLE DEFECTS	0.0	0.0	0.0	1.0	1.0	2.0
ACCIDENT AHEAD	1.8	0.0	1.8	0.5	0.5	1.0
CONGESTION AHEAD	1.8	1.8	1.8	1.5	1.0	1.5
EXCEEDING SPEED LIMIT / TOO FAST FOR CONDITIONS	7.1	5.4	12.5	4.1	4.6	8.7
IMPROPER PASSING	0.0	0.0	0.0	0.5	2.0	2.6
VIOLATION OF STOP SIGN	1.8	1.8	3.6	2.0	1.5	3.1
WRONG SIDE NOT PASSING	0.0	1.8	1.8	0.5	1.0	1.5
FOLLOWING TOO CLOSE	0.0	7.1	7.1	1.5	4.1	5.6
IMPROPER SIGNAL	0.0	0.0	0.0	0.0	0.0	0.0
IMPROPER BACKING	0.0	0.0	0.0	0.5	0.0	0.5
IMPROPER TURN	0.0	1.8	1.8	1.0	2.6	3.6
IMPROPER LANE USAGE / CHANGE	0.0	1.8	1.8	1.0	3.6	4.6
WRONG WAY ONE-WAY STREET	0.0	1.8	1.8	0.0	0.5	0.5
IMPROPER START FROM PARK	0.0	0.0	0.0	0.0	0.5	0.5
IMPROPERLY PARKED	0.0	0.0	0.0	0.5	0.5	1.0
FAILED TO YIELD	1.8	41.1	42.9	2.6	17.9	19.9
DRINKING	0.0	3.6	3.6	0.0	2.0	2.0
DRUGS	0.0	0.0	0.0	0.0	0.0	0.0
PHYSICAL IMPAIRMENT	1.8	3.6	3.6	0.5	1.5	1.5
INATTENTION	14.3	51.8	58.9	27.6	37.8	60.2

[1]This table identifies the percentage of crashes involving one or more ambulances having a specific type of circumstance which contributed to the cause of the crash. This table further defines the percentage of crashes where the contributing circumstance was associated with the driver or his ambulance as well as those attributed to other persons and vehicles in the crash. For instance, when examining speed involvement in 1996 Missouri ambulance crashes, it was found that an ambulance driver was speeding in 4.1% of the crashes. In 4.6% of the crashes another driver was speeding. In 8.7% of the crashes either an ambulance driver, another driver, or both drivers were speeding.

TABLE 4.0.10

AMBULANCES INVOLVED IN 1996 MISSOURI CRASHES

DRIVER INVOLVEMENT BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
DRIVERLESS	0	0.0	2	3.5	8	5.7	10	5.1
KNOWN DRIVER INVOLVED	0	0.0	55	96.5	130	92.9	185	93.9
UNKNOWN DRIVER INVOLVED	0	0.0	0	0.0	2	1.4	2	1.0
TOTAL	0	0.0	57	100.0	140	100.0	197	100.0

TABLE 4.0.11

DRIVERS OF AMBULANCES INVOLVED IN 1996 MISSOURI CRASHES

SEX OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
MALE	0	0.0	39	70.9	101	77.7	140	75.7
FEMALE	0	0.0	16	29.1	29	22.3	45	24.3
UNKNOWN	0	-	0	-	2	-	2	-
TOTAL	0	0.0	55	100.0	132	100.0	187	100.0

TABLE 4.0.12

DRIVERS OF AMBULANCES INVOLVED IN 1996 MISSOURI CRASHES

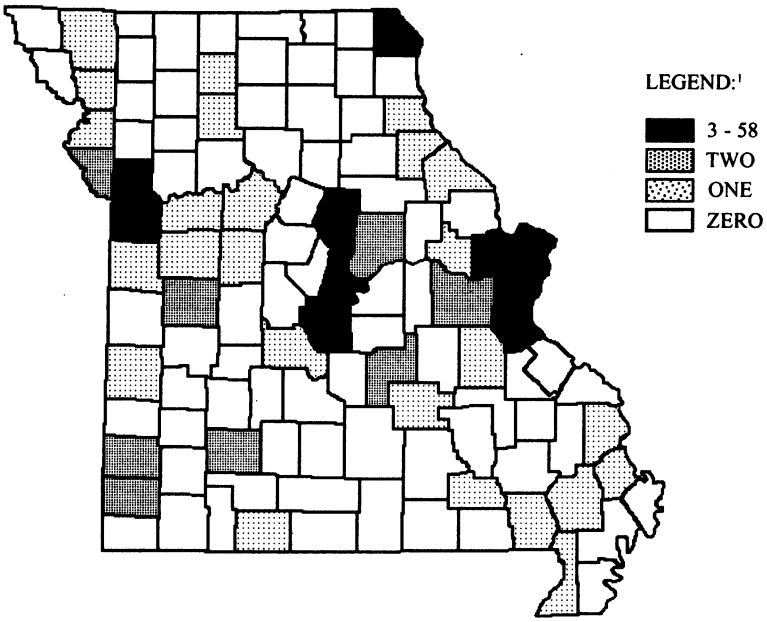
AGE OF DRIVER BY CRASH SEVERITY

	FATAL	%	PERSONAL INJURY	%	PROPERTY DAMAGE	%	TOTAL	%
AVERAGE AGE OF DRIVER	0.0	-	31.9	-	31.4	-	31.5	-
15 YEARS AND UNDER	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20 YEARS	0	0.0	4	7.3	3	2.3	7	3.8
21 - 25 YEARS	0	0.0	16	29.1	27	21.1	43	23.5
26 - 30 YEARS	0	0.0	12	21.8	40	31.3	52	28.4
31 - 35 YEARS	0	0.0	11	20.0	20	15.6	31	16.9
36 - 40 YEARS	0	0.0	2	3.6	27	21.1	29	15.9
41 - 45 YEARS	0	0.0	5	9.1	3	2.3	8	4.4
46 - 50 YEARS	0	0.0	0	0.0	3	2.3	3	1.6
51 - 55 YEARS	0	0.0	0	0.0	3	2.3	3	1.6
56 - 60 YEARS	0	0.0	4	7.3	1	0.8	5	2.7
61 - 65 YEARS	0	0.0	0	0.0	0	0.0	0	0.0
66 YEARS AND OVER	0	0.0	1	1.8	1	0.8	2	1.1
UNKNOWN	0	-	0	-	4	-	4	-
TOTAL	0	0.0	55	100.0	132	100.0	187	100.0

TABLE 4.0.13

1996 AMBULANCE INVOLVED CRASHES

COUNTY QUARTILE ANALYSIS



[1] LEGEND CATEGORIES ARE BASED ON QUARTILES OF COUNTIES.

RANK	COUNTY	FREQUENCY	PERCENT
1.0	ST. LOUIS CITY	58	29.6
2.0	JACKSON	38	19.4
3.0	ST. LOUIS	27	13.8
4.0	CLAY	11	5.6
6.0	JEFFERSON	4	2.0
6.0	MILLER	4	2.0
6.0	ST. CHARLES	4	2.0
9.0	BOONE	3	1.5
9.0	CLARK	3	1.5
9.0	COLE	3	1.5
			First Quartile
			Second Quartile
14.5	CALLAWAY	2	1.0
14.5	FRANKLIN	2	1.0
14.5	GREENE	2	1.0
14.5	HENRY	2	1.0
14.5	JASPER	2	1.0
14.5	NEWTON	2	1.0
14.5	PHELPS	2	1.0
14.5	PLATTE	2	1.0
			Second Quartile
			Third Quartile
31.0	ANDREW	1	0.5
31.0	BUCHANAN	1	0.5
31.0	BUTLER	1	0.5
31.0	CAMDEN	1	0.5
31.0	CAPE GIRARDEAU	1	0.5
31.0	CARTER	1	0.5
31.0	CASS	1	0.5
31.0	DENT	1	0.5
31.0	DUNKLIN	1	0.5
31.0	GRUNDY	1	0.5
31.0	JOHNSON	1	0.5
31.0	LAFAYETTE	1	0.5
31.0	LIVINGSTON	1	0.5
31.0	MARION	1	0.5

RANK	COUNTY	FREQUENCY	PERCENT
31.0	NODAWAY	1	0.5
31.0	PETTIS	1	0.5
31.0	PIKE	1	0.5
31.0	RALLS	1	0.5
31.0	SALINE	1	0.5
31.0	SCOTT	1	0.5
31.0	STODDARD	1	0.5
31.0	TANEY	1	0.5
31.0	VERNON	1	0.5
31.0	WARREN	1	0.5
31.0	WASHINGTON	1	0.5
			Third Quartile
			Fourth Quartile
79.5	ADAIR	0	0.0
79.5	ATCHISON	0	0.0
79.5	AUDRAIN	0	0.0
79.5	BARRY	0	0.0
79.5	BARTON	0	0.0
79.5	BATES	0	0.0
79.5	BENTON	0	0.0
79.5	BOLLINGER	0	0.0
79.5	CALDWELL	0	0.0
79.5	CARROLL	0	0.0
79.5	CEDAR	0	0.0
79.5	CHARITON	0	0.0
79.5	CHRISTIAN	0	0.0
79.5	CLINTON	0	0.0
79.5	COOPER	0	0.0
79.5	CRAWFORD	0	0.0
79.5	DADE	0	0.0
79.5	DALLAS	0	0.0
79.5	DAVIESS	0	0.0
79.5	DE KALB	0	0.0
79.5	DOUGLAS	0	0.0
79.5	GASCONADE	0	0.0
79.5	GENTRY	0	0.0
79.5	HARRISON	0	0.0
79.5	HICKORY	0	0.0
79.5	HOLT	0	0.0
79.5	HOWARD	0	0.0
79.5	HOWELL	0	0.0
79.5	IRON	0	0.0
79.5	KNOX	0	0.0
79.5	LACLEDE	0	0.0
79.5	LAWRENCE	0	0.0
79.5	LEWIS	0	0.0
79.5	LINCOLN	0	0.0
79.5	LINN	0	0.0
79.5	MC DONALD	0	0.0
79.5	MACON	0	0.0
79.5	MADISON	0	0.0
79.5	MARIES	0	0.0
79.5	MERCER	0	0.0
79.5	MISSISSIPPI	0	0.0
79.5	MONITEAU	0	0.0
79.5	MONROE	0	0.0
79.5	MONTGOMERY	0	0.0
79.5	MORGAN	0	0.0
79.5	NEW MADRID	0	0.0
79.5	OREGON	0	0.0
79.5	OSAGE	0	0.0
79.5	OZARK	0	0.0
79.5	PEMISCOTT	0	0.0
79.5	PERRY	0	0.0
79.5	POLK	0	0.0
79.5	PULASKI	0	0.0
79.5	PUTNAM	0	0.0
79.5	RANDOLPH	0	0.0
79.5	RAY	0	0.0
79.5	REYNOLDS	0	0.0
79.5	RIPLEY	0	0.0
79.5	ST. CLAIR	0	0.0
79.5	ST. FRANCOIS	0	0.0
79.5	STE. GENEVIEVE	0	0.0
79.5	SCHUYLER	0	0.0
79.5	SCOTLAND	0	0.0
79.5	SHANNON	0	0.0
79.5	SHELBY	0	0.0
79.5	STONE	0	0.0
79.5	SULLIVAN	0	0.0
79.5	TEXAS	0	0.0
79.5	WAYNE	0	0.0
79.5	WEBSTER	0	0.0
79.5	WORTH	0	0.0
79.5	WRIGHT	0	0.0

TABLE 4.0.14

GLOSSARY

AMBULANCE INVOLVED TRAFFIC CRASH: Any crash in which one or more ambulances were directly involved in the incident.

EMERGENCY SERVICE VEHICLE INVOLVED TRAFFIC CRASH: Any crash in which one or more emergency service vehicles (i.e., police, fire, ambulance, and 'other' emergency service vehicle) were directly involved in the incident.

FATAL TRAFFIC CRASH: A crash in which one or more persons were killed as a result of the crash and their death(s) occurred within 30 days of the incident.

FIRE VEHICLE INVOLVED TRAFFIC CRASH: Any crash in which one or more fire vehicles were directly involved in the incident.

PERSONAL INJURY TRAFFIC CRASH: Any crash in which no person was killed but one or more persons were injured in the incident.

POLICE VEHICLE INVOLVED TRAFFIC CRASH: Any crash in which one or more police vehicles were directly involved in the incident.

PROPERTY DAMAGE TRAFFIC CRASH: Any crash in which no person was killed or injured but property was damaged in the incident.

QUARTILE: The value that marks the boundary between two consecutive intervals in a frequency distribution of four intervals with each containing one quarter of the total population.

RATE OF CHANGE: The formula is:

$$\frac{\text{Value in Current Period - Value in Base Period}}{\text{Value in Base Period}} \times 100$$

RURAL AREA: Any community of less than 5,000 population or an unincorporated area of the State.

URBAN AREA: Any community in the State having a population of 5,000 or more.